

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 86. (Cancelled)

--87. (new) A method for reprogramming a non-human animal somatic cell nucleus, comprising activating the somatic cell nucleus, preparing a recipient egg, and transplanting the somatic cell nucleus into the recipient egg to yield a transplanted nucleus, wherein said transplanted nucleus is reprogrammed to direct development of an embryo.

88. (new) The method of claim 87, wherein said somatic cell nucleus is pretreated prior to said transplanting to increase activation of said somatic cell nucleus.

89. (new) A method for activating a somatic cell nucleus, comprising contacting said somatic cell nucleus with the cytoplasm of an egg just prior to S-phase to yield an activated nucleus.

90. (new) The method of claim 89, wherein said activated nucleus comprises nuclear swelling, nucleic acid replication, and nuclear entrance into mitosis.

91. (new) A method of reprogramming a nucleus of a somatic cell to bring about nuclear activation, comprising pretreating said nucleus to release said nucleus from surrounding cytoskeleton and contacting said nucleus with a cytostatic factor extract.

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92. (new) The method of claim 91, wherein said pretreating step comprises permeabilization of said somatic cell.

93 (new) The method of claim 91, wherein said pretreating step comprises alteration of the cytoskeletal proteins and nuclear matrix proteins of said somatic cell.

94. (new) The method of claim 91, wherein said pretreating step comprises permeabilization of said somatic cell and alteration of the cytoskeletal proteins and nuclear matrix proteins of said somatic cell.

95. (new) The method of claim 91, wherein said cytostatic factor extract further comprises a compound selected from the group consisting of β -glycerol phosphate, creatine phosphate, phosphocreatine kinase, and Ca^{2+} .

96. (new) The method of claim 94, wherein said Ca^{2+} is present at a concentration of 100 μM to 400 μM .

97. (new) A method for cloning a non-human animal from a somatic cell nucleus, comprising activating the somatic cell nucleus, preparing a recipient egg, and transplanting the somatic cell nucleus into the recipient egg to yield a transplanted nucleus, wherein said recipient egg develops into a new organism under the direction of genetic material contained in the transplanted nucleus.--